Actividad Sesión 6: Integrales Indefinidas

1. ¿Cuál es la integral de $1/x^2$?

$$\int ax^n dx = \frac{ax^{n+1}}{n+1} + c$$

$$\int x^{-2}\, dx = \frac{x^{-1}}{-1} + c = -\frac{1}{x^1} + c$$

$$\int x^{-2}\, dx = -\frac{1}{x^1} + c$$

2. Encuentra la integral definida de f(x)=6√x

$$\int ax^n dx = \frac{ax^{n+1}}{n+1} + c$$

$$\int 6x^{\frac{1}{2}}\, dx = \frac{\frac{6x^{\frac{3}{2}}}{1}}{\frac{3}{2}} + c = \frac{12x^{\frac{3}{2}}}{3} + c = 4X^{\frac{3}{2}} + C$$

$$\int 6x^{\frac{1}{2}}\, dx = 4X^{\frac{3}{2}} + c$$

3. Encuentra la integral de $f(x)=x^2+6x-3$

$$\int ax^n dx = \frac{ax^{n+1}}{n+1} + c$$

$$\int x^2 + 6x - 3\, dx = \frac{x^{2+1}}{2+1} + \frac{6x^{1+1}}{1+1} - \frac{3X^{0+1}}{1} + c$$

$$= \frac{x3}{3} + \frac{6x^2}{2} - \frac{3x}{1} + c$$

$$\int x^2 + 6x - 3\,dx = \frac{x3}{3} + 3x^2 - 3x + C$$

4. Determina la integral indefinida de f(x)=1−1/x²

$$\int ax^n dx = \frac{ax^{n+1}}{n+1} + c$$

$$\int X - X^{-2}\,dx = \frac{x^{0+1}}{0+1} - \frac{x^{-2+1}}{-2+1} + \mathrm{c} = -\frac{x^{-1}}{-1} + c$$

$$\int X - X^{-2}\,dx = \mathrm{x} + \frac{1}{x} + c$$

5. Encuentra la integral indefinida de f(x)= √x(x+1)

$$\int x^{\frac{1}{2}}\,[x+1]dx = \int x^{\frac{3}{2}} + x^{\frac{1}{2}}\,dx$$

$$\int ax^n dx = \frac{ax^{n+1}}{n+1} + c$$

$$\int x^{\frac{3}{2}} + x^{\frac{1}{2}}\,dx = x^{\frac{3}{2}} + x^{\frac{1}{2}} + \mathrm{c} = \frac{2x^{\frac{5}{2}}}{5} + \frac{2x^{\frac{3}{2}}}{3}$$

$$\int x^{\frac{3}{2}} + x^{\frac{1}{2}}\,dx = \frac{2\sqrt{x^5}}{5} + \frac{2\sqrt{x^3}}{3} + C$$

$$\int x^{\frac{3}{2}} + x^{\frac{1}{2}}\,dx = 2\sqrt{x^3}\left(\frac{X^2}{5} + \frac{1}{3}\right) + C$$